

ENVIRONMENTAL ASSESSMENT**Mineral County Parcels
October 2017 Geothermal
Lease Sale**

DOI-BLM-NV-C010-2017-0025-EA

U.S. Department of the Interior
Bureau of Land Management
Carson City District
Stillwater Field Office
5665 Morgan Mill Road
Carson City, NV 89701
775-885-6000

June, 2017



It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

DOI-BLM-NV-C010-2017-0025-EA

Table of Contents

LIST OF ACRONYMS	ii
1.0 INTRODUCTION	4
1.1 Identifying Information.....	4
1.1.1 Title, Environmental Assessment Number	4
1.1.2 Location of Proposed Action	4
1.1.3 Lead Office/Preparing Office.....	4
1.1.4 Subject Function Code, Lease, Serial or Case File Number	4
1.1.5 Applicant Name	4
1.2 Background Information	4
1.3 Purpose and Need	6
1.4 Land Use Plan Conformance Statement	6
1.5 Relationships to Statutes, Regulations, Other Plans and Environmental Analysis Documents.....	7
1.6 Decisions to Be Made	8
2.0 THE PROPOSED ACTION AND ALTERNATIVES	9
2.1 Proposed Action.....	9
2.2 ALTERNATIVES.....	10
2.2.1 No Action Alternative.....	10
3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES	11
3.1 Scoping and Issue Identification	11
3.2 General Setting.....	11
3.3 Supplemental Authorities	12
3.4 Resources or Uses Other Than Supplemental Authorities.....	13
3.4.1 Additional Resources Rationale Discussion	15
4.0 Cumulative Impacts Analysis.....	17
4.1 Past, Present Actions, and Reasonably Foreseeable Future Actions	17
4.2 Cumulative Effects Discussion.....	18
5.0 PERSONS, GROUPS OR AGENCIES CONSULTED	19
5.1 List of Preparers	19
6.0 LIST OF REFERENCES	20
7.0 Appendices.....	Error! Bookmark not defined.

LIST OF ACRONYMS

A

AO Authorizing/Authorized Officer

B

BLM Bureau of Land Management

BMP Best Management Practice

BSSG Bi-State Sage-Grouse

C

CCDO Carson City District Office

CEQ Council on Environmental Quality

CESA Cumulative Effects Study Area

CFR Code of Federal Regulations

CRMP Consolidated Resource Management Plan

D

DR Decision Record

E

EA Environmental Assessment

EIS Environmental Impact Statement

EO Executive Order

ESA Endangered Species Act

F

FLPMA Federal Land Policy Management Act of 1976, as amended

FONSI Finding of No Significant Impact

I

ID Team Interdisciplinary Team

L

LUPA Land Use Plan Amendment

N

NDOW Nevada Department of Wildlife
NEPA National Environmental Policy Act

P

PEIS Programmatic Environmental Impact Statement

R

RFFA Reasonably Foreseeable Future Action
RMP Resource Management Plan
ROD Record of Decision

S

SFO Stillwater Field Office

U

U.S.C. United States Code
USFWS U.S. Fish and Wildlife Service
USFS U.S. Forest Service

1.0 INTRODUCTION

This Environmental Assessment (EA) is a site-specific analysis of potential impacts which may result by implementing the Proposed Action or an alternative. This EA will allow the Authorizing Officer (AO) to determine whether implementing the Proposed Action or an alternative may cause significant impacts to the human environment. If the AO determines no significant impacts would occur, a Finding of No Significant Impact (FONSI) would be prepared and a Decision Record (DR) would be issued. If significant impacts are likely to occur, or a FONSI cannot be reached, an Environmental Impact Statement (EIS) would be prepared with a subsequent Record of Decision (ROD). This EA has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) following the guidance provided in Bureau of Land Management (BLM) Handbook H-1790-1 (NEPA, Rel. 1-1710, January 2008), hereafter referred to as H-1790-1.

1.1 Identifying Information

1.1.1 Title, Environmental Assessment Number

Mineral County Parcels, October, 2017 Geothermal Lease Sale; EA# DOI-BLM-NV-C010-2017-0025-EA

1.1.2 Location of Proposed Action

The Proposed Action is located on public land in the vicinity of Whisky Flat within Mineral County, Nevada (Appendix A, Figure 1). Legal descriptions for geothermal lease parcels that comprise the Proposed Action are listed in Appendix A.

The two lease parcels comprising the Proposed Action are described as:

- NV-17-10-007; T. 5 N., R. 30 E., section 1 (approx. 234 acres BLM)
- NV-17-10-008; T. 5 N., R. 30 E., sections 11, 12, 13, 14, 23, 24, 25, & 26 (approx. 2,525 acres BLM)

1.1.3 Lead Office/Preparing Office

BLM, Carson City District Office (CCDO), Stillwater Field Office (SFO)

1.1.4 Subject Function Code, Lease, Serial or Case File Number

Geothermal Nominations: NVN-084503 & NVN-086754

1.1.5 Applicant Name

BLM

1.2 Background Information

The BLM, CCDO, SFO has prepared this EA to analyze impacts to the human and natural environment from leasing of fluid mineral resources on public land located in Mineral County, Nevada. This document has been prepared in accordance with the NEPA, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and the Federal Land Policy and Management Act of 1976 (FLPMA). These provide the authority for the BLM to allow for the exploration, development, and utilization of geothermal resources on BLM-managed public lands.

This EA is tiered to the Programmatic Environmental Impact Statement for Geothermal Leasing in the Western United States (PEIS), (BLM and USFS, 2008) that standardized geothermal and fluid mineral leasing and permitting for fluid minerals operations on federal lands. That document consolidated and updated many of the mitigation measures and standard stipulations from various BLM (and US Forest Service [USFS]) documents addressing fluid mineral leasing and development, including RMPs, forest plans, and other environmental documents for fluid mineral leasing and development. The ROD from that PEIS, signed on December 17, 2008, amended and updated existing BLM Resource Management Plans (RMPs) and provided for the consistent mitigation of geothermal operations by federal land management agencies. The PEIS and ROD can be found electronically at http://www.blm.gov/geothermal_eis.

Stipulations provided in the PEIS serve as the minimal level of protection and were adopted into local land use plans (BLM and USFS, 2008). For example, if an administrative unit has eligible wild and scenic rivers, the wild river stipulation would apply. If an existing land use plan offers more protective measures or has resource specific commitments (e.g., memorandum of understanding for cultural resources), those more protective measures would apply instead. This EA therefore, takes a closer look at the potential indirect and cumulative impacts from geothermal leasing to determine whether these indirect impacts by the lessee could be significant.

A geothermal lease is for the earth's heat resource where there is federal mineral estate. Geothermal resources are underground reservoirs of hot water or steam created by heat from the earth. Geothermal steam and hot water can reach the surface of the earth in the form of hot springs, geysers, mud pots, or steam vents. These resources also can be accessed by wells, and the heat energy can be used for generating electricity or other direct uses, such as heating greenhouses and aquaculture operations or for dehydrating vegetables. Geothermal resources on federal lands are subject to lease under the Geothermal Steam Act of 1970, as amended (30 United States Code [U.S.C.] § 1001, et seq.), and geothermal resource leasing regulations (43 Code of Federal Regulations [CFR] §3200).

Developing geothermal resources on public land involves four phases; leasing, exploration, development/operation and close-out. The first phase is to issue a lease. Leasing of geothermal resources confers an implied right to the lessee to explore and or develop the geothermal resource. The act of leasing does not directly result in surface disturbance activities; however ground disturbance would occur during the second phase, exploration, and phase three, development. Phase four, close-out, would involve removing facilities and reclaiming the site. The BLM would require a separate site-specific NEPA analysis for exploration, development/operation, and close-out phases.

Nominations for geothermal lease parcels are made by a qualified company or individual for lands – up to 5,120 acres per parcel – in which they have an interest in conducting exploration and/or development for geothermal resources. The nominated parcels are reviewed by the BLM for conformance with the applicable Land Use Plan(s) and other regulations prior to environmental review of each parcel. The BLM holds geothermal lease sales at least once every two years in states where there are nominations pending. The geothermal competitive leasing process is described in 43 CFR §3203.

This EA provides a programmatic analysis by focusing on the leasing of the two parcels rather than project-specific exploration and development of each parcel (details for the geothermal exploration and development of each parcel are unknown at this time). Broad impacts associated with the allocation of geothermal resources for leasing, along with the adoption of stipulations are analyzed.

1.3 Purpose and Need

The purpose of the Proposed Action is to lease some or all of the geothermal resources on the BLM managed portion of the two potential lease parcels located in Mineral County. The two parcels located on public land are open to fluid mineral leasing by regulation and cover an area of approximately 5,763 acres. Of this total, approximately 2,759 acres of the two offered lease parcels are located on lands managed by the BLM and this is the area analyzed in this document. The USFS is conducting analysis of the portion of the lease parcels that lie within land managed by the USFS.

The need for the Proposed Action is to respond to geothermal leasing nominations to explore for and produce geothermal resources within two potential lease parcels (5,763 acres) of BLM-administered lands in Mineral County, Nevada. The need is established by the BLM's responsibilities under the Geothermal Resource Leasing regulations (43 CFR 3200). Additionally Executive Order (EO) 13212 as amended by EO 13302, Actions to Expedite Energy-Related Projects, which states "the increased production and transmission of energy in a safe and environmentally sound manner is essential." Executive departments and agencies are directed to "take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy."

EO 13212 further states that "(f)or energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate." In response to the EO 13212, BLM issued a National Energy Policy Implementation Plan in June 2001, which directs the BLM to process leases, in a timely manner, in order to help support efforts to increase energy production from federal lands, while preserving the health of the federal lands.

1.4 Land Use Plan Conformance Statement

Carson City District Consolidated Resource Management Plan (CRMP), May 2001:

The proposed action and alternatives described below are in conformance with the CCDO CRMP, page(s) #MIN-1 and MIN-5, Management Action/Decision #1 and Standard Operating Procedure #5.

- MIN-1, Desired Outcomes, 1: "Encourage development of energy and mineral resources in a timely manner to meet national, regional and local needs consistent with the objectives for other public land uses";
- MIN-5, Standard Operating Procedures: Leasable Minerals, 5: "Oil, gas, and geothermal exploration and production upon BLM land are conducted through leases with the Bureau and are subject to terms and stipulations to comply with all applicable federal and state laws pertaining to various considerations for sanitation, water quality, wildlife, safety, and reclamation. Stipulations may be site

specific and are derived from the environmental analysis process.”

Nevada and California Greater Sage-Grouse Bi-State Distinct Population Segment Land Use Plan Amendment, ROD signed May 27, 2016:

The proposed action and alternatives described below are in conformance with the Nevada and California Greater Sage-Grouse Bi-State Distinct Population Segment Land Use Plan Amendment (BSSG LUPA) page(s) #12.

- Minerals: 1. For new and existing leases in habitat, limit off site noise to less than 10 decibels (dbA) above ambient measures from 2 hours before until 2 hours after sunrise at the perimeter of a lek during active lek season.
- Fluid Minerals (Oil, Gas, and Geothermal):
 1. For new leases, apply a No Surface Occupancy stipulation for fluid mineral leasing in BSSG habitat with no exceptions, modifications, and waivers.
 2. Upon expiration or termination of existing leases, apply a No Surface Occupancy stipulation for fluid mineral leasing in BSSG habitat with no exceptions, modifications, and waivers.
 3. Require seasonal restriction November 1 to March 1 on geophysical exploration within winter habitats.
 4. Apply the least invasive seismic exploratory method in habitat.
 5. New fences will not be authorized unless necessary for safety or environmental protection reasons.

PEIS for Geothermal Leasing in the Western United States, ROD signed December 17, 2008:

The decision 1) allocated BLM lands as either open or closed to consideration for geothermal leasing, 2) established a projected new level of potential geothermal development through existing planning level decisions (a reasonably foreseeable development scenario), and 3) adopted stipulations, Best Management Practices (BMPs), and procedures for geothermal leasing and development. The Geothermal ROD actions were to be implemented as amendments for 114 BLM land use plans. The BLM makes decisions whether or not to issue geothermal leases in conformance with the amended land use plans on the basis of the analysis in the Geothermal PEIS.

In accordance with CEQ regulations (40 CFR 1508.28, 40 CFR 1502.20), this EA is tiered to the Geothermal PEIS and the Geothermal ROD. Tiering uses coverage of general matters in broader NEPA documents to inform subsequent narrower documents. It allows for analysis of a smaller range of alternatives and limits the analysis focus to issues not already addressed. Portions of this document incorporate information and analyses from the Geothermal PEIS and Geothermal ROD by reference in accordance with 40 CFR 1502.21

1.5 Relationships to Statutes, Regulations, Other Plans and Environmental Analysis Documents

The Proposed Action and Alternatives are consistent with Federal laws and regulations, plans, programs and policies of affiliated tribes, other Federal agencies, State and local governments including, but not limited to, the following:

- FLMPA of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976, as amended 1978, 1984, 1986, 1988, 1990-1992, 1994 and 1996);
- Title 43 of the CFR Subpart §§3200-3203;
- The Endangered Species Act (ESA) of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984, and 1988);
- Migratory Bird Act – (EO). 13806;
- Native American Graves Protection and Repatriation Act, 1990;
- American Indian Religious Freedom Act of 1979;
- National Historic Preservation Act (Public Law [P.L.] 89-665; 54 U.S.C. §300101 et seq.as amended January 2015);
- Archaeological Resources Protection Act of 1979, As Amended (P.L. 96-95; 16 U.S.C. 470aa-mm);
- Wild Free-Roaming Horse and Burro Act, as amended, of 1971;
- Clean Water Act of 1972;
- Materials Act of 1947 (July 31, 1947), as amended (30 U.S.C. 601 et seq.)
- The NEPA of 1969

1.6 Decisions to Be Made

The AO will decide whether to lease or not to lease some or all of the preliminary lease parcels NV-17-10-007 and NV-17-10-008 that lie within BLM managed lands. And, if leased, what stipulations would be attached to the lease(s) to protect important resources. The USFS will conduct separate analysis for the portion of the lease parcels within USFS managed lands. The USFS will then decide to consent or not consent to the leasing of their portion of the lease parcels. And, if consent to lease is given, the decision would be made as to what stipulations would be attached to minimize impacts to other resources and comply with regulations, policy, and forest plan direction.

A decision to approve the geothermal lease nominations would not authorize surface disturbance from geothermal exploration or development activities. The BLM would conduct additional environmental analysis and make a new decision for each proposal that involves surface disturbance on a geothermal lease.

If the Proposed Action is approved, the BLM would offer the leases in a competitive sale. Once a lease is issued, the leaseholder would have the right to explore for and develop geothermal resources on the leased land for a term of 10 years, subject to renewal or extension and additional environmental analysis.

2.0 THE PROPOSED ACTION AND ALTERNATIVES

The previous chapter presented the purpose and need for the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves any resource conflicts and issues, the BLM has developed a reasonable range of action alternatives. These alternatives, as well as a No Action Alternative, are presented below.

2.1 Proposed Action

The BLM CCDO is proposing to lease two parcels covering approximately 5,763 acres of public land in Mineral County, Nevada. Lease Parcels NV-17-10-007 and NV-17-10-008 are located south of the community of Hawthorne, Nevada in the area of Whisky Flat. State highway 359 essentially bisects the parcels and serves as the boundary between BLM managed public lands to the east and USFS managed public lands to the west. The Proposed Action only involves the portion of the two lease parcels within the BLM managed public lands, approximately 2,759 acres of the total. The USFS will conduct separate analysis for the portion of the lease parcels within USFS managed lands and then decide to consent or not consent to the leasing of their portion of the lease parcels.

Issuance of geothermal leases confers on the lessee a right to future exploration and development of the resource with the lease area. However, leasing geothermal resources does not confer on the lessee the right to proceed with any ground-disturbing activities related to exploring for or developing geothermal resources. Issuance of geothermal leases could have indirect impacts because such leasing represents a commitment of resources, and it is reasonably expected that subsequent exploration, development, and closeout would occur. Proposals for exploration and/or development at specific sites would be examined for conformance with the land use plan and analyzed for NEPA adequacy at the time the proposals are submitted. Any proposal for exploration and/or development must be analyzed as required by NEPA.

A geothermal lease typically grants the lessee access to geothermal resources in the lease area for a period of 10 years. The terms of the lease require the lessee to show a certain level of diligence toward developing the geothermal resources within the lease area or the lease may be terminated. Once an area is developed for productive use of geothermal energy, the lease allows the lessee use of the resource for 40 years with a right of renewal for another 40 years. Geothermal exploration and production on public land conducted through leases is subject to terms and stipulations to comply with all applicable federal and state laws pertaining to various considerations for sanitation, water quality, wildlife, safety, and reclamation. Lease stipulations may be site specific and are derived from the environmental analysis process. Stipulations are site specific and are derived from the current management plan for that specific area.

Federal geothermal leases are initially issued through a competitive process. Only public lands that have been offered competitively and receive no bid are made available for noncompetitive leasing. Parcels not sold at the competitive sale become available for noncompetitive leasing for a 2-year period. Most lease applications are for a minimum of 640 acres. Lands not available for leasing are cited under Department of Interior, BLM, 43 CFR §3201.11 Geothermal Resource Leasing and Geothermal Resources Unit Agreements and in the CRMP, 2001, as amended. Examples of public lands not open to fluid mineral leasing are Wilderness Areas, Wilderness

Study Areas, Areas of Critical Environmental Concern, or National Conservation Areas. Also excluded are tribal lands, wildlife refuges, wildlife management areas, and private land with titles that include all fluid mineral rights.

This EA incorporates by reference the lease stipulations from the 2008 PEIS Geothermal Leasing ROD (Section 2.3, pages 2-4 through 2-9). The lease stipulations would apply to any potential future geothermal exploration and development on the two parcels as a result of lease sales. For the purposes of this EA, the lease stipulations from the CRMP of 2001, the PEIS and ROD of 2008 and the BSSG LUPA and ROD are considered design features of the Proposed Action, and would apply to the parcels under the jurisdiction of each plan, at the discretion of the BLM (refer to lease parcel stipulations in Appendix C).

2.2 ALTERNATIVES

2.2.1 No Action Alternative

In accordance with Chapter VI, Section 6.6.2 of H-1790-1, this EA evaluates the No Action Alternative, which is a reasonable alternative to the Proposed Action. The objective of the No Action Alternative is to describe the environmental consequences that may result if the Proposed Action were not implemented. The No Action Alternative forms the baseline from which the impacts of the Proposed Action can be measured.

Under the No Action Alternative, the BLM would deny the geothermal leasing nominations for the two parcels. The BLM would recommend no leasing and future exploration and development would not occur on the parcels. The BLM could adopt the No Action Alternative if the Proposed Action would result in unacceptable impacts to the federal lands.

3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

This chapter identifies and describes the current condition and trend of elements or resources in the human environment which may be affected by the Proposed Action and the anticipated environmental consequences. Per the CEQ regulations found at 40 CFR 1508.8, ‘effects’ and ‘impacts’ are synonymous in this EA. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative.

3.1 Scoping and Issue Identification

In accordance with the H-1790-1 internal scoping was conducted by the SFO Interdisciplinary (ID) Team to identify potential resources which may be impacted by implementation of the Proposed Action and Alternatives. Internal scoping meetings for the BLM were initiated on March 27, 2017. During internal scoping BLM staff identified issues and concerns regarding the Proposed Action. A field visit by the ID Team was conducted April 20, 2017. A scoping letter was sent to the Walker River Paiute Tribe on April 28, 2017.

3.2 General Setting

Parcel NV-17-10-007

This parcel is located approximately 15 miles south of Hawthorne, Nevada along State Highway 359. It is comprised of one section of public land with approximately 406 acres of USFS managed lands west of the highway and approximately 234 acres of BLM managed lands east of the highway. The parcel is located along the western edge of Whisky Flat, a flat expanse at about 5,740 feet elevation roughly ten miles north to south and five miles east to west. Whisky Flat is bounded on the west by the convergence of the southern Wassuk Range and the northern Anchorite Hills and on the south and east by the Excelsior Mountains and Garfield Hills. The parcel is situated about ½ mile from the mouth of Powell Canyon in the southern Wassuk Range. The parcel lies on alluvium derived from the granitic rocks of the Wassuk Range and is of low relief gently sloping eastward away from the range front. The dominant vegetation throughout the parcel is Wyoming big sagebrush with Indian ricegrass and desert needlegrass serving as the primary grasses.

Parcel NV-17-10-008

This parcel is located approximately 16 miles south of Hawthorne, Nevada along State Highway 359. It encompasses eight sections of public land with approximately 2,595 acres of USFS managed land west of the highway and approximately 2,525 acres of BLM managed land east of the highway. The parcel is located along the western edge of Whisky Flat directly south and adjacent to parcel NV-17-10-007. This parcel is very similar to the first parcel in terms of topographic relief and soil type. Vegetation in this parcel is also dominated by Wyoming big sagebrush with the addition of needle-and-thread to the other two grass species found in the first parcel.

3.3 Supplemental Authorities

Appendix 1 of BLM's NEPA Handbook (H-1790-1) identifies Supplemental Authorities that are subject to requirements specified by statute or executive order and must be considered in all BLM environmental documents. BLM Nevada IM NV-2009-030 (Supplemental Authorities to Consider in NEPA Documents) provided statewide guidance to BLM District and Field Offices in Nevada on how these supplemental authorities outlined in H-1790-1 should be considered in NEPA documents. Attachment 1 to IM NV-2009-030 provides the Supplemental Authorities list as a screening tool for review and documentation of relevant authorities (laws, regulations, executive orders, directives, etc.) in NEPA documents. This list expands on Appendix 1 of H-1790-1 to include other legal authorities, with requirements specified by statute or executive order, which must be considered in all Nevada BLM EA documents.

The table below lists the Supplemental Authorities, their status in relation to the Proposed Action, and rationale for whether the topic will be carried forward for detailed analysis. Supplemental Authorities determined to not be present or present, but not affected by the Proposed Action need not be carried forward or discussed further. Supplemental Authorities determined to be present and may be affected may be carried forward in the document if there are issues which necessitate a detailed analysis.

Table 3-1: Supplemental Authorities

Resource or Issue	Present Yes/No	Affected Yes/No	Rationale
Air Quality	Yes	No	There would be no impact from leasing alone. Further analysis would be required for any future exploration and/or development activities.
Areas of Critical Environmental Concern	No	No	None present within the project area for the Proposed Action.
Cultural Resources	No	No	No known cultural resources within the proposed lease area. A Class II investigation had negative results. The project area for the Proposed Action has a low potential for undiscovered cultural resources.
Environmental Justice	No	No	No low income or minority populations would be disproportionately affected by the Proposed Action.
Farm Lands (Prime and Unique)	Yes	No	See Section 3.4.1 Additional Resources Rationale Discussion below.
Floodplains	No	No	There are no floodplains within the project area for the Proposed Action.
Migratory Birds	Yes	No	Any future authorized exploration or utilization activities within in the proposed lease area would comply with the Migratory Bird Treaty Act.
Native American	No	No	The Walker River Paiute Tribe was notified of

Resource or Issue	Present Yes/No	Affected Yes/No	Rationale
Religious Concerns			the proposed lease sale via a certified letter on April 28, 2017.
Noxious and Invasive, Non-native Species	No	No	No weed infestations currently documented within the proposed lease area.
Threatened or Endangered Species	No	No	No known Threatened, Endangered, or Proposed species within the proposed lease area.
Wastes, Hazardous or Solid	No	No	None present within the project area for the Proposed Action.
Water Quality, Surface/Ground	Yes	No	See Section 3.4.1 Additional Resources Rationale Discussion below.
Wetlands/Riparian Zones	No	No	None present within the project area for the Proposed Action.
Wild and Scenic Rivers	No	No	None present within the project area for the Proposed Action.
Wilderness	No	No	None present with the project area for the Proposed Action.

3.4 Resources or Uses Other Than Supplemental Authorities

The following resources or uses, which are not Supplemental Authorities as defined by BLM's Handbook H-1790-1, are evaluated by the SFO ID Team in all NEPA documents. Resources or uses determined to not be present or are present, but not affected by the Proposed Action need not be carried forward or discussed further. Resource or uses determined to be present and may be affected may be carried forward in the document if there are issues which warrant a detailed analysis.

Table 3-2: Resources or Uses Other Than Supplemental Authorities

Resource or Uses	Present Yes/No	Affected Yes/No	Rationale
BLM Sensitive Species (plants and wildlife)	Yes	No	See Section 3.4.1 Additional Resources Rationale Discussion below.
Forestry Resources	No	No	None present within the project area for the Proposed Action.
Fire Management	Yes	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
General Wildlife	Yes	No	See Section 3.4.1 Additional Resources Rationale Discussion below.
Land Use Authorization	Yes	No	There would be no impact from leasing alone. Further analysis would be required for any future exploration and/or development activities.
Lands with	No	No	There are no Lands with Wilderness

Resource or Uses	Present Yes/No	Affected Yes/No	Rationale
Wilderness Characteristics			Characteristics within the project area for the Proposed Action.
Livestock Grazing	Yes	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
Minerals	Yes	No	An LR2000 records search yielded no mining claims for the project area. Nevada Department Of Transportation (NDOT) material sites are located within the lease parcels, BLM would add a Notice To Lessee pertaining to these NDOT material sites.
Paleontological	No	No	No known paleontological resources and low potential for significant paleontological resources within the project area for the Proposed Action.
Recreation	Yes	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
Socioeconomics	Yes	No	If the parcels were leased, the royalty payments from those leases would be divided between the respective County, state, and federal agencies with which a lease resides providing minor economic benefits to the local, state, and national economies. There would be no increase in population at the leasing stage. Further analysis would be required for exploration and/or development activities.
Soils	Yes	No	See Section 3.4.1 Additional Resources Rationale Discussion below.
Travel Management	No	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
Vegetation	Yes	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
Visual Resources	No	No	There would be no impact from leasing alone. Further analysis would be required for exploration and/or development activities.
Wild Horses and Burros	No	No	Project area for Proposed Action in not within a Herd Area or Herd Management Area.
Global Climate Change/Greenhouse	Yes	No	There is a public and scientific debate about human-caused contributions to global

Resource or Uses	Present Yes/No	Affected Yes/No	Rationale
Gas Emissions			climate change, no methodology currently exists to correlate greenhouse gas emissions (GHG) and to what extent these contributions would contribute to such climate change. No methodology currently exists to correlate GHG emissions from Geothermal Leasing to any specific resource impact within the project area.

3.4.1 Additional Resources Rationale Discussion

Farm Lands (Prime and Unique)

A portion of the proposed lease is located within an area of farmland of statewide importance. Farmland of statewide importance is defined as all farmland with a full or partial irrigation water supply and is used for the production of food, feed, fiber, forage, and oilseed crops. Impacts on farmlands are not anticipated as issuance of a lease does not authorized the lessee to conduct surface disturbance activities. In addition, these areas are not currently being irrigated and are not being used for agricultural purposes.

Water Quality, Surface/Ground

Direct impacts on water resources (quality and quantity) are not anticipated as issuance of a lease does not authorized the lessee to conduct surface disturbance activities or other activities associated with geothermal development. However, there could be indirect impacts on water resources (surface/ground) if future exploration, development, and/or production were to occur within the proposed lease. If future exploration, development, and/or production occurs on the proposed lease, a water and aquatic resources monitoring and mitigation plan would be developed to ensure impacts to resources are minimized. Any activities associated with these operations would be in conformance with BLM Manual 7240, Water Quality (P) and BLM Manual 7250, Water Rights. In addition, lease stipulations would further reduce impacts to water resources.

General Wildlife and BLM Sensitive Species (plants and wildlife)

The proposed lease parcels support and are adjacent to lands that support wildlife characteristic of the Great Basin. Biological diversity varies according to topography, plant community, proximity to water, soil type, and season. For a comprehensive discussion of potential wildlife species that may be present, refer to the most recent Draft CCDO Resource Management Plan (Draft CCDO RMP 2014).

BLM sensitive species are species that require special management consideration to avoid potential future listing under the ESA and that have been identified in accordance with procedures set forth in BLM Manual 6840 – Special Status Species. A complete list of BLM sensitive species within the area can be found in the Draft CCDO RMP 2014. Many of these species as well as other wildlife species of concern are also discussed in the Nevada State Wildlife Action Plan (NDOW 2013).

Sensitive species are defined in BLM Manual 6840 as native species found on BLM-administered lands for which the BLM has the capability to significantly affect the conservation status of the species through management and either one of the following:

1. There is information that a species has recently undergone, is undergoing, or is predicted to undergo a downward trend such that the viability of the species or a distinct population segment of the species is at risk across all or a significant portion of the species range; or
2. The species depends on ecological refugia or specialized or unique habitats on BLM-administered lands, and there is evidence that such areas are threatened with alteration such that the continued viability of the species in that area would be at risk.

A portion of parcel NV-17-10-008 contains habitat for the BSSG. The BSSG was proposed as threatened under the ESA by the US Fish and Wildlife Service (USFWS) in the Federal Register on October 28, 2013. On April 23, 2015 the USFWS withdrew the proposed listing due, in part, to commitments by multiple Federal and state agencies to continue conservation measures outlined in the Bi-State Action Plan for Conservation of the Greater Sage-Grouse Bi-State Distinct Population Segment (Bi-State Action Plan). USFWS will continue to monitor the status of the BSSG and if, at any time, new information indicates declining implementation of the Bi-State Action Plan, they can initiate listing procedures (USFWS Federal Register, 2015). The BSSG is currently a Nevada Species of Special Concern.

Parcel NV-17-10-008 contains approximately 30 acres of BSSG habitat and is within the Mount Grant Population Management Unit (Appendix A, Figure 2). This habitat is an isolated polygon of approximately 475 acres that is surrounded by non-suitable habitat. The nearest connected BSSG habitat is approximately 3 miles west of the BLM administrative boundary. The nearest lek (Mt. Hicks) to the parcel and BLM administered boundary is over 10 miles away on USFS administered lands and has an unknown status as of 2016. No telemetry data provided by NDOW indicates use of this isolated habitat and season habitat is not present. A site visit to the lease parcel on April 20, 2017 by the BLM biologist indicated that the 30 acres of habitat within the lease parcel was marginal habitat at best and existing disturbance on the landscape includes a road and a powerline that has fragmented the habitat.

4.0 Cumulative Impacts Analysis

The CEQ regulations define cumulative impacts as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The CEQ formally defines cumulative impacts as follows:

‘...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time’ (40 CFR 1508.7).

For the purposes of this EA, the cumulative impacts are the sum of all past, present (including proposed actions), and reasonably foreseeable future actions (RFFAs) resulting primarily from Geothermal Leasing activities, and public uses. The purpose of the cumulative analysis in this EA is to evaluate the significance of the Proposed Action’s contributions to cumulative environment.

As required under the NEPA and the regulations implementing NEPA, this chapter addresses those cumulative effects on the environmental resources in the Cumulative Effects Study Areas (CESAs) which could result from the implementation of the Proposed Action and No Action Alternative, past actions, present actions, and RFFAs. The extent of the CESA varies by resource based on the geographic or biological limits of the specific resource and is specified for each resource analysis below. The time frame considered to be most appropriate for evaluating the incremental effects of RFFAs is 10 years, the primary term for a geothermal lease. The reasonable scope of the cumulative analysis would be restricted to connected, cumulative, and similar actions to the Proposed Action within the CESA.

4.1 Past, Present Actions, and Reasonably Foreseeable Future Actions

Past actions considered are those whose impacts to one or more of the affected resources have persisted to present day. Present actions are those occurring at the time of this evaluation and during implementation of the Proposed Action. RFFAs constitute those actions that are known or could reasonably be anticipated to occur within the analysis area for each resource, within a time frame appropriate to the expected impacts from the Proposed Action. The past, present, and RFFAs applicable to the assessment area are identified in the following Table 3-3.

Table 4.1: Past, Present and RFFAs Applicable to the CESA

Project -- Name or Description	Status (X)		
	Past	Present	Future
Livestock grazing	X	X	X
Dispersed Recreation Activities	X	X	X
ROW Authorizations	X	X	X
Mining Exploration and Development	X		X
Geothermal Exploration			X
Range Improvements			X

4.2 Cumulative Effects Discussion

No impacts were identified for any resources as a result of implementing the Proposed Action as the proposal is leasing only and does not include any authorizations for ground disturbing activities. Leasing fluid minerals on public land in the three parcels comprising the Proposed Action would not contribute to cumulative impacts on resources or resource uses in the project area. Issuing leases does not cause direct impacts; however, it does imply a conditional commitment of resources for future exploration and utilization. Three separate and generally sequential phases of geothermal development could occur. The probable sequence and degree of environmental impact would be contingent upon the success or failure of each preceding phase. The three phases are exploration, development/production, and close-out. While the number, variety, and magnitude of actions on federal lands that may be considered to occur is great, information about how many future projects may actually be undertaken is lacking, and information about the likely locations of future development is unknown. This evaluation does not replace the requirement that BLM conduct a site-specific environmental analysis at the exploration, development, and production stages, in order to comply with the NEPA.

The cumulative impact analysis from Chapter 5 of the PEIS for Geothermal Leasing in the Western United States, discusses these subsequent phases and potential impacts associated with them (http://www.blm.gov/geothermal_eis). Any proposals on these leases in the future for exploration or development activities would be analyzed under a site-specific environmental analysis which will include an analysis of cumulative impacts.

If the No Action alternative were selected there would be no potential impacts or cumulative impacts to the considered parcels from any future geothermal exploration or development projects. Selection of the No Action alternative would not affect any of the other activities that have historically and currently are occurring on the parcels.

5.0 PERSONS, GROUPS OR AGENCIES CONSULTED

Table 5-1: Persons, Groups, or Agencies Consulted

AGENCY/GROUP	PERSON/S CONTACTED
Walker River Paiute Tribe	

5.1 List of Preparers

Table 5-2: Stillwater Field Office Resource Specialists

NAME	TITLE	PROJECT EXPERTISE
Kenneth R. Collum	Stillwater Field Manager	Authorized Officer
	Realty Specialist	Land Use Authorization; Access
Jason Wright	Archaeologist	Cultural Resources; Native American Religious Concerns
Kenneth Depaoli	Geologist	Geology; Mineral Materials
Dave Schroeder	Environmental Compliance Specialist	Wastes, Hazardous or Solid; Geothermal Resources
Michelle Stropky	Hydrologist	Air Quality; Water Quality, Surface/Ground; Soils
Mark Mazza	Rangeland Management Specialist/ Weed Coordinator	Noxious and Invasive, Non- native Species
Melanie Hornsby	Outdoor Recreation Planner	Recreation; Travel Management; Wilderness; Lands with Wilderness Characteristics
Angelica Rose	Planning and Environmental Coordinator / Military Liaison	Environmental Justice; Socioeconomics; NEPA Compliance
Stacy Sylvester	Rangeland Management Specialist	Livestock Grazing, Vegetation, Wild Horses and Burros
Melanie Cota	Wildlife Biologist	Migratory Birds; Threatened or Endangered Species; Special Status Species (BLM Sensitive Species); General Wildlife
Keith Barker	Fire Ecologist	Fire Management, Vegetation

6.0 LIST OF REFERENCES

43 Code of Federal Regulations (CFR) §3200.

Avian Power Line Interaction Committee (APLIC). 2012. Reducing Avian Collisions with Power Lines: State of the Art in 2012. Edison Electric Institute and APLIC. Washington, D.C.

Avian Power Line Interaction Committee (APLIC). 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

Bureau of Land Management (BLM) 1994. Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. 1994.

_____. 2001. Carson City Field Office Consolidation Resource Management Plan. Carson City: Department of the Interior Bureau of Land Management, 2001.

_____. 2007a. Appendix C. Final Programmatic Environmental Impact Statement, Vegetation Treatments Using Herbicides on Bureau of Land Management Lands in 17 Western States. U.S. Department of the Interior, Bureau of Land Management, Washington Office, Washington D.C.

_____. 2007b. Record of Decision for the Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States Programmatic EIS. U.S. Department of the Interior, Bureau of Land Management, Washington Office, Washington D.C.

_____. 2008a. H-1790-1 National Environmental Policy Act Handbook. Washington D.C.; US Department of the Interior Bureau of Land Management, 2008.

_____. 2008b. Record of Decision and Resource Management Plan Amendments for Geothermal Leasing in the Western United States Programmatic EIS. U.S. Department of Interior, Bureau of Land Management and U.S. Department of Agriculture, U.S. Forest Service, Washington Office, Washington, D.C.

_____. 2008c. Special Status Species Management. Bureau of Land Management Manual 6840. Washington, D.C., Department of Interior, Bureau of Land Management. December 2008.

_____. 2016. Record of Decision and Land Use Plan Amendment for the Nevada and California Greater Sage-Grouse Bi-State Distinct Population Segment in the Carson City District and Tonopah Field Office EIS. U.S. Department of Interior, Bureau of Land Management, Nevada State Office, Reno, Nevada.

Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. 1994.

Great Basin Bird Observatory (GBBO). 2010. Nevada Comprehensive Bird Conservation Plan,

ver. 1.0. Great Basin Bird Observatory, Reno, NV. Available online at www.gbbo.org/bird_conservation_plan.html.

Natural Resources Conservation Service (NRCS). 2015. Web Soil Survey. Online at: <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

Neel, L.A. 1999. Nevada Partners in Flight Bird Conservation Plan <http://www.partnersinflight.org/bcps/plan/pl-nv-10.pdf>.

Wildlife Action Plan Team (WAPT). 2012. Nevada Wildlife Action Plan. Nevada Department of Wildlife, Reno.